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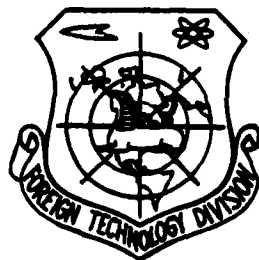
FOREIGN TECHNOLOGY DIVISION

SPECTRAL INSTRUMENTS. SPECTRAL SLITS AND ATTACHMENTS
BASIC PARAMETERS AND DIMENSIONS. TECHNICAL REQUIREMENTS
GOST 17173-71

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81 2 18 071

(12) 15L

EDITED TRANSLATION

(14)

FTD-ID(RS)T-1785-80

(11) 6 January 1981

MICROFICHE NR: FTD-80-C-001241

SPECTRAL INSTRUMENTS. SPECTRAL SLITS AND
ATTACHMENTS. BASIC PARAMETERS AND DIMENSIONS.
TECHNICAL REQUIREMENTS. GOST 17173-71

English pages: 12

(9) Edit trans of Russian state standard
Source: GOST 17173-71, pp. 1-6

Country of origin: USSR
Translated by: Carol S. Nack
Requester: FTD/TQTD
Approved for public release; distribution
unlimited.

1416??

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

*ye initially, after vowels, and after ъ, ь; e elsewhere.
When written as ё in Russian, transliterate as yё or ё.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	$\sinh^{-1}$
cos	cos	ch	cosh	arc ch	$\cosh^{-1}$
tg	tan	th	tanh	arc th	$\tanh^{-1}$
ctg	cot	cth	coth	arc cth	$\coth^{-1}$
sec	sec	sch	sech	arc sch	sech^{-1}
cosec	csc	csch	csch	arc csch	csch^{-1}

Russian	English
rot	curl
lg	log

1785

SPECTRAL INSTRUMENTS. SPECTRAL SLITS AND ATTACHMENTS

Basic Parameters and Dimensions. Technical Requirements

State Standard of the USSR

GOST 17173-71

Official Edition

By resolution of the State Standards Committee of the Council of Ministers USSR of 9 September 1971, NO. 1566; effective 1 January 1973.

Failure to observe the standard is forbidden by law

This standard applies to rectilinear symmetrical adjustable
spectral slits intended for limiting the width of the cross section
of a light beam and to attachments for the slits intended for
mounting the following items in front of the slit: condensing lenses,
protective glasses, light filters, comparison prisms, bushings with
stepped attenuators or shaped diaphragms which limit the height of
the light beam.

The standard does not apply to slits for goniometric
spectrometers.

1. Basic Parameters and Dimensions

1.1. The size of the division of the reading device of the slit
opening mechanism and the limits of opening of the slit must
correspond to those indicated in Table 1.

Table 1.

MM

(1) Наименования щели	(2) Основные параметры	
	(3) Цена деления	(4) Пределы раскрытия щели
(5) Щель входная, ограничивающая пучок лучей, входящий в оптическую систему	0,01	0—4
	0,001	0—0,4
(6) Щель выходная, ограничивающая пучок лучей, выходящий из оптической системы	0,01	0—4
	0,001	0—0,4

KEY: (1) Name of slit. (2) Basic parameters. (3) Size of division.
(4) Limits of opening of slit. (5) Input slit limiting the beam
bundle entering the optical system. (6) Output slit limiting the beam
bundle leaving the optical system.

Note: The input and output slits differ from each other by the
position of the working plane of the blade relative to the plane of
attachment of the slit housing. The working plane of the blade must
be turned toward the incident light beam.

1.2. The housing of the input and output slits should be made without a flange or with one.

1.3. The basic dimensions of the input slit with a housing without a flange should correspond to those indicated in Fig. 1, and for an input slit with a housing with a flange - in Fig. 2.
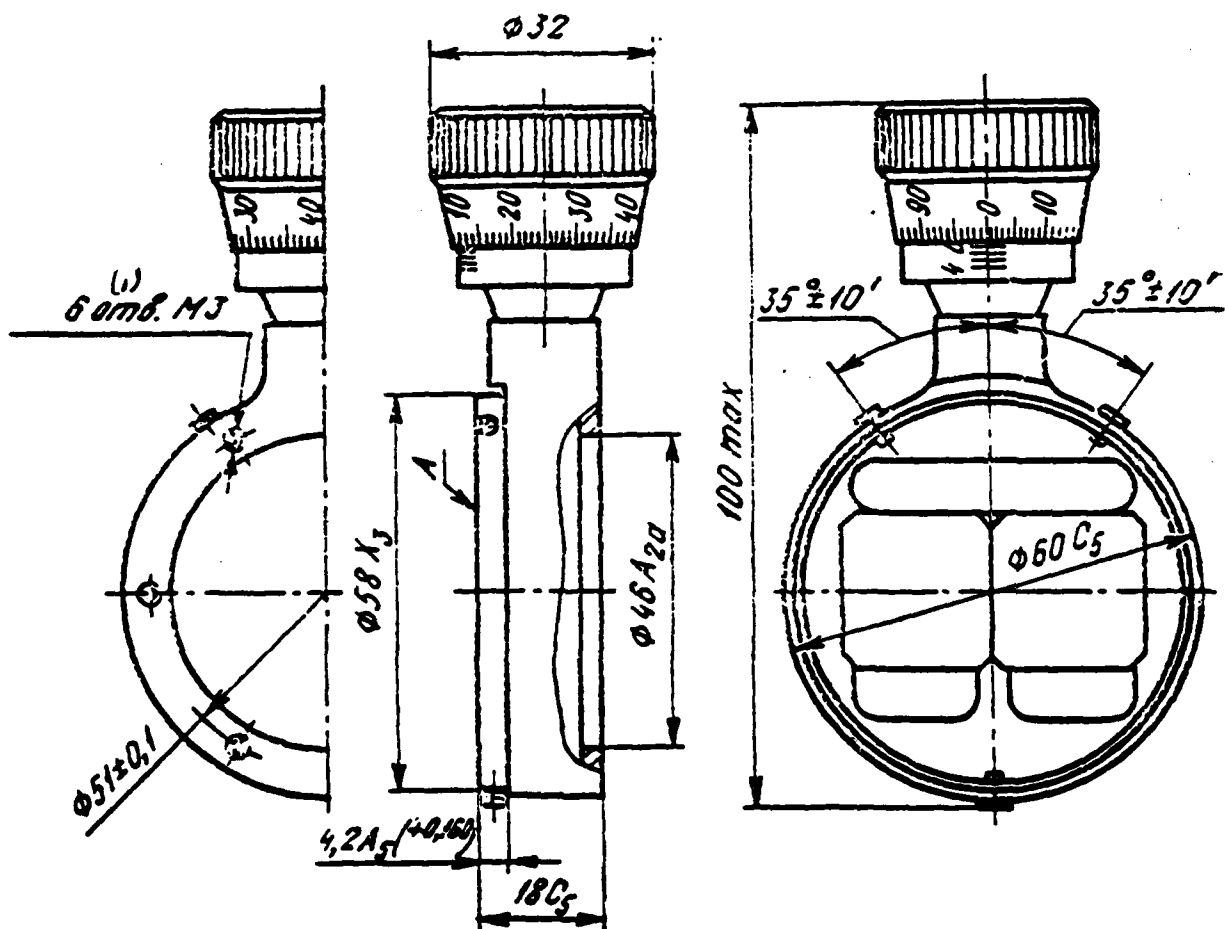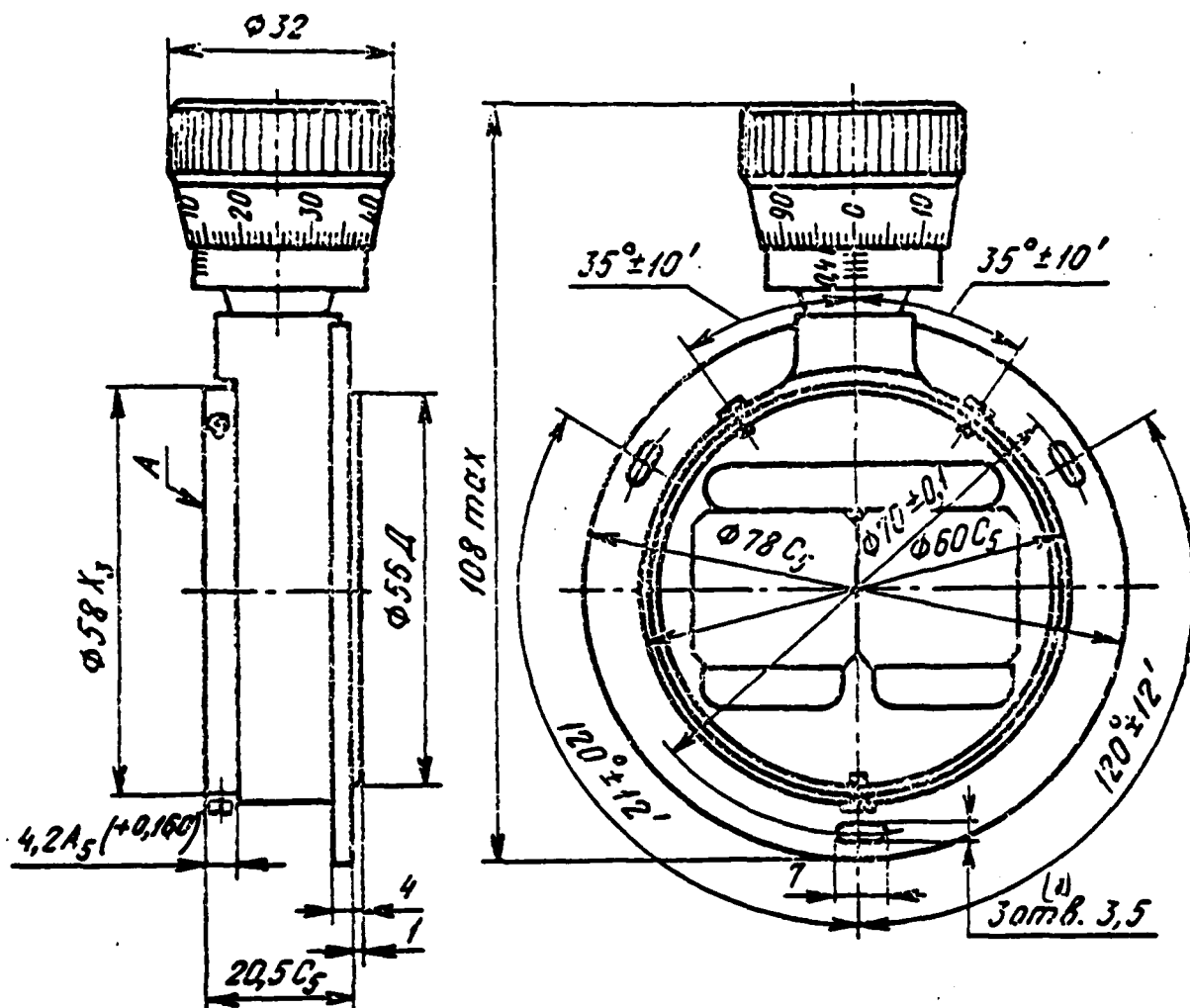

Fig. 1.   KEY: (1) holes.

Fig. 2.   KEY: (1) holes.

Note: The drawings are only used for indicating the dimensions of the spectral slits and do not determine their construction.

Examples of conventional designations:

input slit with division size of 0.01 mm without flange:

   Inp. slit 0.01 GOST [All-Union State Standard] 17173-71

the same, with division size of 0.001 mm with a flange:

   Inp. slit 0.001 F GOST 17173-71

output slit with division size of 0.001 mm with a flange:

   Outp. slit 0.001 F GOST 17173-71

1.4. The basic dimensions of the attachments must correspond to those indicated in Fig. 3. The standard does not establish the construction of the attachments.
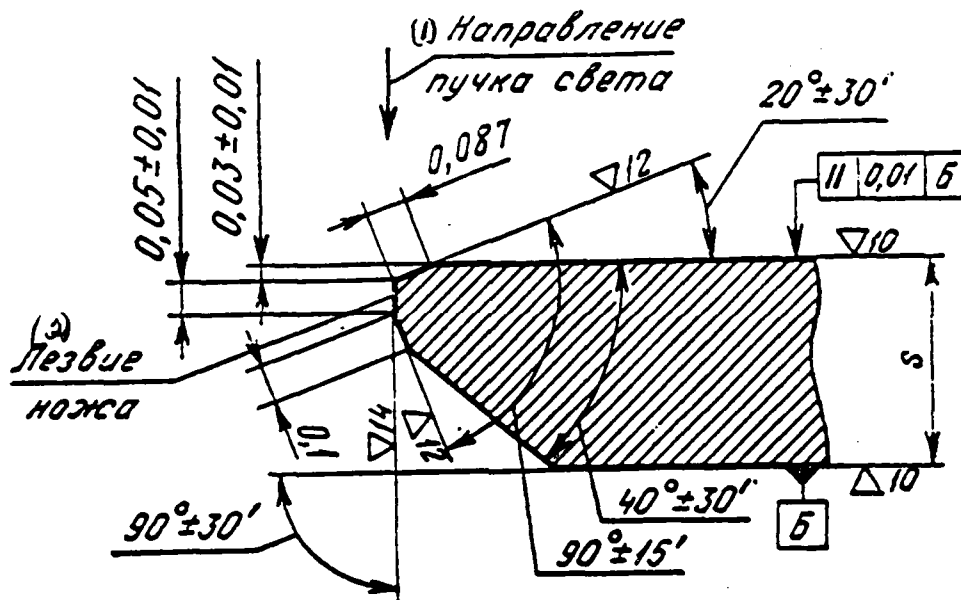
Fig. 3.   KEY: (1) Coupling for mounting optical parts. (2) Coupling for insert. (3) grooves. *Reference dimensions.
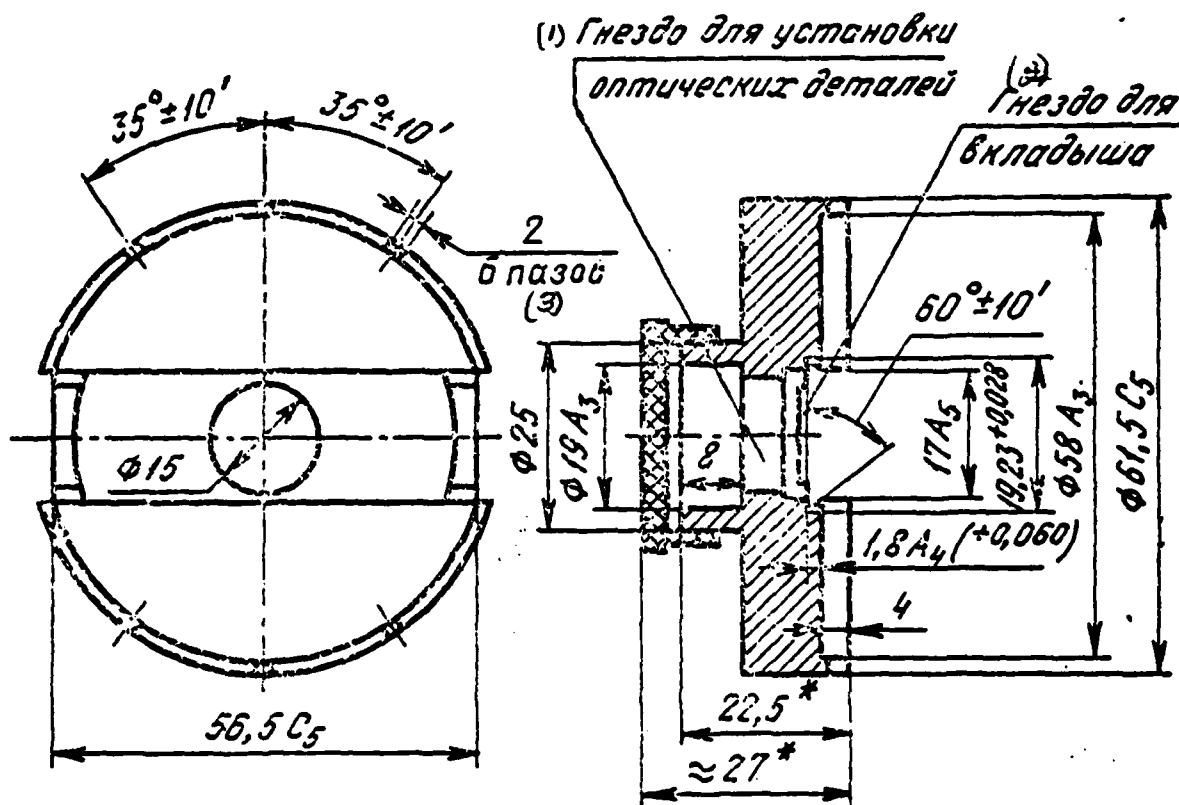
* Размеры для справок.

1.5. The dimensions and profile of the blade edge of the

rectilinear slit must correspond to those indicated in Fig. 4.

Fig. 4.   KEY: (1) Direction of light beam. (2) Blade edge.

2. Technical Requirements

2.1. The spectral slits and their attachments must be made in accordance with the requirements of this standard according to the technical documentation confirmed in the established manner.

2.2. The error in the reading device of the slit opening mechanism must not exceed the values indicated in Table 2.

Table 2.   KEY: (1) Division size of reading device. (2) Slit width. (3) Error of reading device. (4) From. (5) To. (6) Total.

ММ

(1) Цена деления отсчетного устройства	(2) Ширина щели	(3) Погрешность отсчетного устройства
0,01	(5) До 0,05 (4) От 0,05 (5) до 0,20 (4) От 0,20 до 1,0 (6) Св. 1,0 (5)	±0,005 ±0,010 ±0,015 ±0,025
0,001	(5) До 0,05 (4) От 0,05 (5) до 0,12 (4) От 0,12 до 0,25 (6) Св. 0,25 (5)	±0,002 ±0,003 ±0,005 ±0,006

2.3. The readings of the reading device must not exceed 0+0.5 divisions when the slit is completely closed.

2.4. The shift of the center of the slit relative to the axis of diameter 46 A_2 (Fig. 1) or diameter 56 D (Fig. 2) must not be greater than 0.2 mm.

2.5. The nonsimultaneity of closing the slit with respect to height must not be greater than 0.001 mm.

2.6. The blades must be assembled in pairs. The permissible difference in dimensions for the blade pair must not exceed that indicated in Table 3.

Table 3.   KEY: (1) Name of blade dimensions. (2) Nominal values. (3)
Permissible difference in dimensions of blade pair. (4) Thickness.
(5) Height of chamfering. (6) Width of edge.

ММ

(1) Наименования размеров ножа	(2) Номинальные значения	(3) Допускаемая разность размеров пары ножей
(4) Толщина s	—	±0,005
(5) Высота фаски	0,03	±0,01
(6) Ширина лезвия	0,05	±0,01

2.7. The blade assembly must be marked.

2.8. The output edges of the blade edge must lie in one plane.
The noncoincidence of the output edges of the blade in the assembled
slit must not exceed 0.005 mm within the limits of the entire slit
opening.

2.9. There must be no dents, notches or irregularities on the
blade edges.

2.10. The blades of the assembled slit must not protrude beyond

end A of the housing. Shifting and slanting of the blades are
permitted only inside the slit housing and must not be greater than
0.1 mm.

2.11. The slit blades must have hardness HRC 56-58.

2.12. During storage and transportation of the slit, the blades
must be separated.

2.13. The probability of malfunction-free operation of the slit
at a confidence probability of $P^* = 0.3$ must not be lower than 0.90
per 10,000 measurements.

2.14. The parameters indicated in this standard are provided at
a temperature of $20\pm2^\circ C$.

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